

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	) Art Unit: Not Yet Assigned
	)
Pankaj B. Shah	) Examiner: Not Yet Assigned
	)
Appln. No.: not yet received	) ATTY.'S DOCKET: ARL 03-19
	)
Filed: even date herewith	)
	)
For: METHOD OF FABRICATING SUB-100)	
NANOMETER FIELD EMITTER TIPS )	
COMPRISING GROUP III-NITRIDE )	
SEMICONDUCTORS )	

**INFORMATION DISCLOSURE STATEMENT [IDS]**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Information Disclosure Statement is submitted in accordance with 37 CFR §§1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

[X] 1. This IDS should be considered, in accordance with 37 CFR §1.97, as it is filed within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application.

[X] 2. In accordance with 37 CFR §1.98, this IDS includes a list (e.g., form PTO-1449) of all patents,

In re Appln. No.


publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document listed is attached.

[X] 3. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

[X] 4. In accordance with 37 CFR §§1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant(s) reserves the right to prove that the date of publication is in fact different.

Respectfully submitted,

Date: 10/10/2003

  
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(use as many sheets as necessary)

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of	2
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**Complete if Known**

<b>Application Number</b>	Not yet received
<b>Filing Date</b>	Even date herewith
<b>First Named Inventor</b>	Pankaj B. SHAH
<b>Group Art Unit</b>	Not yet assigned
<b>Examiner Name</b>	Not yet assigned
<b>Attorney Docket Number</b>	ARL 03-19

[illegible][illegible]

Examiner  
Signature

Date  
Considered

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 2

of

2

**Complete if Known**

Application Number	Not yet received
Filing Date	Even date herewith
First Named Inventor	Pankaj B. SHAH
Group Art Unit	Not yet assigned
Examiner Name	Not yet assigned
Attorney Docket Number	ARL 03-19

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T <sup>2</sup>
	AH	SOWERS, et al., "Thin films of aluminum nitride and aluminum gallium nitride for cold cathode applications," Appl. Phys. Lett., October 20, 1997, pp. 2289-2291, Vol. 71, No. 16.	
	AI	ZHELEVA, et al., "Dislocation density reduction via lateral epitaxy in selectively grown GaN structures," Appl. Phys. Lett., October 27, 1997, pp. 2472-2474, Vol. 71, No. 17.	
	AJ	UNDERWOOD, et al., "GaN field emitter array diode with integrated anode", J. Vac. Sci. Technol. B., March/April 1998, pp. 822-825, Vol. 16, No. 2.	
	AK	KOZAWA, et al., "Field emission study of gated GaN and Al <sub>0.1</sub> Ga <sub>0.9</sub> N/GaN pyramidal field emitter arrays," Appl. Phys. Lett., November 22, 1999, pp. 3330-3332, Vol. 75, No. 21.	
	AL	KUBALL, et al., "Focused Ion Beam Etching of Nanometer-Size GaN/AlGaN Device Structures and Their Optical Characterization by Micro-Photoluminescence/Raman Mapping," MRS Interent J. Nitride Semicond. Res., 2000, Vol. 5S1, Art. W12.3.	
	AM	GÜNTHER, et al., "Comparison of field emission from diamond and AlN coated Si Tips," EURO FE, September 25-29, 2000, Segovia-Spain.	
	AN	KASU, et al., "Spontaneous ridge-structure formation and large field emission of heavily Si-doped AlN," Appl. Phys. Lett., March 26, 2001, pp. 1835-1837, Vol. 78, No. 13.	
	AO	SUGINO, et al., "Field emission from GaN surfaces roughened by hydrogen plasma treatment," Appl. Phys. Lett., May 21, 2001, pp. 3229-3231, Vol. 78, No. 21.	
	AP	KASU, et al., "Field-emission characteristics and large current density of heavily Si-doped AlN and Al <sub>x</sub> Ga <sub>1-x</sub> N (0.38 ≤ x < 1)," Appl. Phys. Lett., November 26, 2001, pp. 3642-3644, Vol. 79, No. 22.	
	AQ	TONDARE, et al., "Field emission from open ended aluminum nitride nanotubes," Appl. Phys. Lett., June 24, 2002, pp. 4813-4815, Vol. 80, No. 25.	
	AR	SHE, et al., "Silicon tip arrays with ultrathin amorphous diamond apexes," Appl. Phys. Lett., November 25, 2002, pp. 4257-4259, Vol. 81, No. 22.	

Examiner  
SignatureDate  
Considered

\* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.